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Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application. The following listing provides the amended claims with the amendments marked with deleted material crossed out and new material underlined to show the changes made.

- 5 1. (Currently Amended) A method of scaling digital video information, said method comprising:

 accepting a scaling relaxation value, said scaling relaxation value specifying an amount to relax a scaling performed to prevent buffer underflow or overflow; ~~and~~

 adjusting a scaling value with said scaling relaxation value; and

10 encoding said digital video information utilizing said adjusted scaling value.

2. (Original) The method of scaling digital video information as claimed in claim 1, said method further comprising:

 calculating said scaling value, said scaling value dependent on a current buffer usage.

- 15 3. (Currently Amended) The method of scaling digital video information as claimed in claim 1 wherein said adjusting a scaling with said scaling relaxation value comprises adding said scaling relaxation value to said scaling value and subtracting the product of said scaling value and said scaling relaxation value from a result of said adding operation.

- 20 4. (Currently Amended) The method of scaling digital video information as claimed in claim 2 wherein said adjusting a scaling of a bit budget with said scaling relaxation value comprises adding said scaling relaxation value to said scaling value and subtracting the product of said scaling value and said scaling relaxation value from a result of said adding operation.

5. (Currently Amended) A method of tracking digital video information complexity, said method comprising:

 determining a complexity measure for a current digital video picture; ~~and~~

combining said complexity measure for said current digital video picture to a running average complexity measure for a series of digital video pictures in a manner that prevents said current digital video picture from significant changing said running average complexity measure for a the series of digital video pictures; and

5 encoding said digital video information utilizing said running average complexity measure.

6. (Original) The method of tracking digital video information complexity as claimed in claim 5 wherein said running average complexity is not allowed to change by more than a predetermined percentage.

10 7. (Original) The method of tracking digital video information complexity as claimed in claim 5 wherein said running average complexity is processed by a non-linear smoothing filter.

8. (Currently Amended) A computer-readable medium storing a computer program for execution by at least one processor, the program comprising a set of computer instructions for
15 implementing a method of scaling digital video information, the computer program comprising sets of instructions for:—said set of computer instructions performing:

accepting a scaling relaxation value, said scaling relaxation value specifying an amount to relax a scaling performed to prevent buffer underflow or overflow; and

adjusting a scaling value with said scaling relaxation value; and

20 encoding said digital video information utilizing said adjusted scaling value.

9. (Currently Amended) The computer-readable medium as claimed in claim 8,
wherein said the computer program further comprises a set of computer instructions for further
perform: calculating said scaling value, said scaling value dependent on a current buffer usage.

10. (Currently Amended) The computer-readable medium as claimed in claim 8,
5 wherein said adjusting a scaling with said scaling relaxation value comprises adding said scaling
relaxation value to said scaling value and subtracting the product of said scaling value and said
scaling relaxation value from a result of said adding operation.

11. (Currently Amended) The computer-readable medium as claimed in claim 9,
wherein said adjusting a scaling of a bit budget with said scaling relaxation value comprises
10 adding said scaling relaxation value to said scaling value and subtracting the product of said
scaling value and said scaling relaxation value from a result of said adding operation.

12. (Currently Amended) A computer-readable medium storing a computer program
for execution by at least one processor, the computer program comprising a set of computer
instructions for tracking digital video information complexity, the computer program comprising
15 sets of instructions for: ~~said set of computer instructions performing:~~

determining a complexity measure for a current digital video picture; ~~and~~

combining said complexity measure for said current digital video picture to a running
average complexity measure for a series of digital video pictures in a manner that prevents said
current digital video picture from significant changing said running average complexity measure
20 for a the series of digital video pictures; and

encoding said digital video information utilizing said running average complexity
measure.

13. (Original) The computer-readable medium as claimed in claim 12 wherein said running average complexity is not allowed to change by more than a predetermined percentage.

14. (Original) The computer-readable medium as claimed in claim 12 wherein said running average complexity is processed by a non-linear smoothing filter.

5 15. (New) A method of encoding a sequence of video frames, the method comprising:

allocating an initial value for a bit budget for a current frame in the sequence of video frames;

determining an initial value for an scale value based on a percentage of a memory buffer space used, said scale value for scaling the bit budget to prevent an underflow or an overflow of said memory buffer;

determining a relaxation control value to relax said scaling of the bit budget;

determining a final bit budget for the current frame based on said scale value adjusted with the relaxation control value; and

15 encoding the current video frame using the final bit budget.

16. (New) The method of encoding a sequence of video frame as claimed in claim 15, wherein said scale value is set in a range from 0 to 1, wherein said relaxation value is set in a range from 0 to 1.

17. (New) A computer-readable medium storing a computer program for execution by at least one processor, the computer program for encoding a sequence of video frames, the computer program comprising sets of instructions for:

allocating an initial value for a bit budget for a current frame in the sequence of video frames;

determining an initial value for an scale value based on a percentage of a memory buffer space used, said scale value for scaling the bit budget to prevent an underflow or an overflow of said memory buffer;

determining a relaxation control value to relax said scaling of the bit budget;

5 determining a final bit budget for the current frame based on said scale value adjusted with the relaxation control value; and

encoding the current vide frame using the final bit budget.

18. (New) The computer-readable medium as claimed in claim 17, wherein said scale value is set in a range from 0 to 1, wherein said relaxation value is set in a range from 0 to 1.